

Testimony of
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“GROWTH AND DEVELOPMENT OF THE DERIVATIVES MARKET”
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TESTIMONY PROVIDED BY DR. CHARLES SMITHSON

Chairman Crapo and members of the Subcommittee, I am pleased to have the opportunity to testify before the Subcommittee today about a market that is crucial to the effect functioning of both industrial firms and financial institutions, but one that is widely misunderstood.

I am Charles Smithson. I am the Managing Partner of Rutter Associates, an advisory firm that specializes in financial risk management. My colleagues and I assist banks, insurance companies and industrial companies in measuring and managing their exposures to financial price risks (i.e., interest rate risk, foreign exchange rate risk, commodity price risk and equity price risk), credit risk and liquidity risk.

While the benefits of freely-functioning markets are without question, the interaction of willing buyers and sellers can lead to price volatility. Since derivatives provide market participants with a means of dealing with that price volatility, the derivatives market we are discussing here today is a consequence of the increased price volatility we witnessed in the 1970s and 1980s -- increased volatility in foreign exchange rates resulting from the move to floating exchange rates,

increased volatility in interest rates associated with the move to damp inflation in the late 1970s, and increased volatility in commodity prices associated with deregulation of those markets.

What can be said about the *consequences* of derivatives? Over the more than 20 years I have been involved in derivatives and risk management, I have been collecting empirical evidence, which today I will share with you in the form of answers to four important questions.

Question #1: What happens to the volatility of financial prices when the financial risk management products appear?

Some argue that the introduction of derivatives leads to increased volatility. John Shad (former Chairman, Securities and Exchange Commission), one of the more outspoken proponents of this view, saw derivatives as “the tail wagging the dog,” escalating price volatility to “precipitous, unacceptable levels.” Others suggest that there is no reason for the introduction of derivatives to have any effect on the volatility of underlying assets. Derivatives are “created assets” (for every long there is a corresponding short). Thus the introduction of these contracts would have no predictable effect on trading in the underlying security. Still others argue that the introduction of derivatives should lead the volatility of the underlying assets to fall, not rise. After all, the newly created trading opportunity in this derivative security should increase market liquidity for an underlying asset.

This question has been extensively examined by academics. When we searched the academic journals, my colleagues and I found 39 empirical analyses, starting with the Holbrook Working’s classic 1960 study of the impact of the introduction of futures on onion prices through a 2000

study of the impact of the introduction of options on share prices. While the “derivatives increase volatility” story seems plausible, the empirical evidence supports the contention that the introduction of derivatives reduces price volatility in the underlying markets.

Question #2: What happens to the bid-ask spread and trading volume for the underlying assets?

My colleagues and I found five academic studies that examined the impact of the introduction of derivatives on the bid/ask spread in the underlying market. These studies indicate overwhelmingly that the bid/ask spreads in the underlying market declines after the introduction of derivatives.

Some have suggested that the introduction of derivatives reduces volumes in the underlying markets. Finance theory suggests that the reduced bid-ask spread noted above and the ability to arbitrage one market against the other should increase volumes in the underlying markets. My colleagues and I found six published studies in which academics looked at what happens to the trading volumes in the underlying asset when derivatives on the asset are introduced. These studies indicate that the introduction of derivatives is associated with increases in unadjusted volumes in the underlying and either an increase or no change in market-adjusted trading volumes.

Question #3: If a firm uses risk management, does the market regard the firm as being less risky?

Over the years, most of my interest has been focused on this question and on the “payoff” Question #4 to follow. After all, if I am going to suggest that firms should manage financial price risk, I should have a pretty good idea that the market will reward them for doing so. What I am going to tell you about today come from an article Professor Betty Simkins (Oklahoma State University) and I published in the most recent issue of *The Journal of Applied Corporate Finance*.

In the context of Question #3, if a publicly-traded firm is “exposed” to financial price risk, the returns to the firm’s equity would be sensitive to changes in interest rates, foreign exchange rates, or commodity prices. Consequently, Question #3 could be rephrased as: If such a firm uses derivatives to manage one or more of those exposures, does the exposure decline?

Professor Simkins and I found 15 studies that examined this question, six that focused on financial institutions and nine on industrial companies. Overwhelmingly, the studies indicated that the use of risk management led to a decline in the perceived riskiness of the firm:

- In the case of financial institutions, all six of the studies reported that the use of derivatives reduced the sensitivity of the equity returns to interest rates
- In the case of industrial companies, eight of the nine studies reported that the use of derivatives reduced the sensitivity of their equity returns to financial price risks.

Question 4: What impact does the use of derivatives have on the value of the firm?

All of the empirical evidence on this question is very recent. Professor Simkins and I found only ten studies that focused on this question, the “oldest” of which was published in 2001.

Six of the studies examined the impact of interest rate and FX risk management (one looking at banks and five looking at industrial corporations). The other four studies examined commodity price risk management, with one looking at commodity users and three looking at commodity producers.

- Managing interest rate and foreign exchange rate risk with derivatives is associated with higher firm values.
- Similarly, the study of commodity price risk management by commodity users found that fuel price hedging by airlines was associated with higher firm values.
- In contrast, the three studies of commodity price risk management by commodity producers found either no effect or a negative effect on equity values – If investors take positions in commodity producers as a way to gain exposure to the commodity price, the firm should not necessarily benefit from hedging the commodity price risk.

Summary & Conclusions

We have answered four questions about risk management using empirical evidence provided by the academic community:

1. What happens to the volatility of financial prices when the financial risk management products appear?

The introduction of derivatives has reduced price volatility in the underlying market.

2. What happens to the bid-ask spread and trading volume for the underlying assets?

The introduction of derivatives has decreased bid/ask spreads and has had little effect on trading volume in the underlying market.

3. If a firm uses risk management, does the market regard the firm as being less risky?

Yes – Firms that use risk management are perceived to be less risky.

4. Does the use of derivatives increase, leave-unchanged, or decrease the value of the firm?

The use of derivatives to manage interest rate risk, foreign exchange rate risk and commodity price risk by users of commodities is associated with higher firm values.

Perhaps the principal benefit from the innovations over the last two decades has been the improvement in the allocation of risk within the financial system. Derivatives have dramatically reduced the cost of transferring risks to those market participants who have a comparative advantage in bearing them. As Merton Miller said: “Efficient risk-sharing is what much of the futures and options revolution has been all about.”

Derivatives markets provide corporations the ability to hedge against currency, interest rate, and commodity price risks far more quickly and cheaply than was possible before. Derivatives have permitted the transfers of risk from individual firms to well diversified institutional investors. This transfer has not only lowered mortgage rates for homebuyers, it also should help protect the financial system from another disaster like the one experienced by the Savings and Loan industry.

Derivatives are often described as a “zero sum game;” and they are. But, even though one party's gain is another's loss in an individual transaction, the more efficient risk sharing afforded by derivatives can reduce total risk for all market participants.

Derivatives have expanded the technology available to firms and individuals to manage risk. They have reduced the costs of managing exposures, thereby increasing liquidity and efficiency.

In order for derivatives to deliver the benefits that they are capable of providing, there must, of course, be a high degree of certainty as to their enforceability and regulatory treatment.

Congress made extraordinary progress in ensuring such certainty in 2000 with its enactment of the Commodity Futures Modernization Act of 2000. The substantial growth in the depth and breadth of the listed and OTC markets for derivative products in nearly all asset categories since 2000 is a testament to the importance of legal certainty and the success of Congress's efforts.

Mr. Chairman, members of the Subcommittee, thank you once again for the opportunity to testify before the Subcommittee on these important subjects. Our economic success depends on a clear understanding of the relationship between financial instruments, their use and their regulation, on the one hand, and the market consequences of their use and regulation, on the other hand. I would be pleased to assist the Subcommittee and its staff going forward in connection with the Subcommittee's efforts to understand these relationships.